« Water has no boundary »

Exposé de
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INTERNATIONAL NETWORK OF BASIN ORGANIZATIONS
Red Internacional de Organismos de Cuenca
الشبكة الدولية لهيئات الأحواض
Created in 1994 to facilitate operational exchanges between Basin Organizations (BOs).

**INTERNATIONAL NETWORK OF BASIN ORGANIZATIONS (INBO)**

**INBO’s REGIONAL NETWORKS**

- North American Network of Basin Organizations (NANBO)
- Latin American Network of Basin Organizations (LANBO)
- Brazilian Network of Basin Organizations (BNBO)
- Mediterranean Network of Basin Organizations (MENBO)
- African Network of Basin Organizations (ANBO)
- EUROPE-INBO Group for WFD
- Central and Eastern European Network of Basin Organizations (CEENBO)
- Network of Asian River Basin Organizations (NARBO)

**INTERNATIONAL NETWORK OF BASIN ORGANIZATIONS**

188 FULL MEMBERS or PERMANENT OBSERVERS in 71 COUNTRIES

**الشبكة الدولية لهيئات الأحواض**

188 عضو كامل أو مراقب دائم دائم في 71 دولة
Global warming cannot now be avoided.
Fresh water resources will be directly affected in the coming years!

% change in runoff by 2050

water availability

% change in runoff by 2050
Global warming cannot now be avoided.

- Many of the major “food-bowls” of the world are projected to become significantly drier
- Globally there will be more precipitation
- Higher temperatures will tend to reduce run off
- A few important areas drier (Mediterranean, southern South America, northern Brazil, west and south Africa)
The climate change is likely to increase the frequency of extreme events, such as floods and droughts:
Globally:
Accelerated glacial and snow melt will change patterns in Water supply

Mountains are the « water towers of the planet »,

Areas dominated by snow & glacial melt
Melting glaciers could initially:
- increase flood risk,
- strongly reduce water supplies,
- threaten around 1/6 of world’s population.

Mountains are the « water towers of the planet »,

[Image of mountains and valley]
Agricultural productivity is projected to decrease in the tropics and sub-tropics.

Crop yields in Southern Europe are expected to decline by 20% with a 2°C increase in global temperatures.
Rising sea levels will result in tens to hundreds of millions of people moving!

Potential impact of sea level rise: Nile Delta

Population: 3,800,000
Cropland (Km²): 1,800

Population: 6,100,000
Cropland (Km²): 4,500

Source: Otto Simonelli, UNEP/GRID Geneva; Prof. G. Sestini, Florence; Remote Sensing Center, Cairo; DIETERKE Weltwirtschaftsakademie.
Indeed, basins are the natural territories, in which water runs, on the soil or in the sub-soil, whatever are the national or administrative boundaries or limits crossed.

An overall approach should be organized on the relevant scale of basin areas of rivers, lakes and aquifers,
WITH REGARD TO FLOODS:

Reuters August 11, 2006

“Indian floods: kill 350, leave 4m homeless in 5 Indian states”
Europe: Changing flood frequency

- Over much of Europe, "one in a hundred year floods" will occur every couple of decades
THE DIFFERENT HYDROLOGICAL SCALES:

- **District** = river basins + associated groundwaters and coastal waters
- **Sub-basin/ Sector/ Water type**
  - element of district to deal with particular aspects
- **Water bodies**
  - scale of evaluation of the achievement of good status

« UPSTREAM-DOWNSTREAM » COMMON CAUSE ON THE SCALE OF BASINS AND SUB-BASINS
FLOOD CONTROL: PROTECTION, FORECAST, PREVENTION.

PROTECTION AGAINST FLOODS MUST PASS THROUGH A COORDINATED APPROACH, COMBINING, ON THE SCALE OF BASINS AND SUB-BASINS:

- Protecting people and properties,
- Reducing vulnerabilities,
  - Restoring the free flow of rivers,
  - Preserving - rehabilitating the natural flooding areas,
- Foreseeing hazardous events,
  - Identification of hazardous areas,
  - Prohibition of buildings in the exposed areas,
- Warning and educating.
Persistent droughts

Reuters, Feb. 20, 2006

“Approximately 11 million people are threatened by starvation in Djibouti, Ethiopia, Kenya, Somalia and Tanzania... Rain is unlikely before April”
En ce qui concerne les sècheresses…
WE MAY FACE MORE AND MORE CONFLICTS FOR WATER ACCESS

JOURDAN RIVER BASIN

1950

2000

2020
CLIMATE CHANGE CONCERNS
ALL MAJOR WATER USES

Urban uses:
- drinking water supply
- wastewater treatment

Industrial uses
- abstraction
- discharges

Agricultural uses
- abstraction
- diffuse discharges

Recreational / ecological uses
- angling
- bathing...

Conservation of ecosystems:
- rivers, lakes, wetlands, aquifers, coastal areas,

WATER ALLOCATION BETWEEN SECTORS.

Source: Ministry of the environment, Quebec, Canada.
IS WATER EQUITABLY AND SOUNDLY SHARED BETWEEN THE VARIOUS USES, ENSURING A BETTER OPTIMIZATION OF WATER AND AVOIDING WASTAGES?
MOBILIZING NEW RESOURCES SHOULD BE PLANNED WHEN THEY ARE ECOLOGICALLY ACCEPTABLE AND ECONOMICALLY REASONABLE.
WITH REGARD TO DROUGHTS:

- WATER SAVING,
- LEAK DETECTION,
- RECYCLING,
- THE REUSE OF TREATED WASTE WATER,
- GROUNDWATER RECHARGE,
- THE DESALINATION OF SEA WATER,
- RESEARCH ON LOW-CONSUMPTION USES...

... MUST BECOME PRIORITIES.
A NEW APPROACH TO WATER USES IN AGRICULTURE SHOULD BE LOOKED FOR.
Participation in decision-making

The representatives of populations and local authorities, water users or organizations representing collective interest should participate in basin management beside administrations, especially, **in Basin Councils or Committees.**
Conflicts
requirements collected
from each point of view

Designing a program
through **dialogue**

Reaching **agreement**
with an ambitious program
Based on integrated information systems, allowing knowledge on resources and their uses, polluting pressures, ecosystems and their functioning, the follow-up of their evolutions and risk assessment.

Water resources management should be organized:

Example of SINA and SIRA in Mexico
water resources management should be organized:

**2000**

Description of the initial situation

Focus on economic aspects:
- estimate the economic "weight" of water uses and services
- assess the level of recovery of costs of water services

**2025**

Baseline scenario: projection for 2025

Baseline scenario:
- appraisal of evolutions of uses, pressures...
- identification of potential gaps in water status with GES

Based on management plans or master plans that define the medium and long-term objectives to be achieved;
water resources management should be organized:

through the development of Programs of Measures and multiyear priority investments;

Characterisation of the district

Is “GES” likely to be achieved in 2015?

Basic measures will suffice

Choose the most cost-effective measures

Combine all measures
Assess their impact

Programme of measures

Basic measures will not suffice

Define supplementary measures
Assess their cost-effectiveness
Are the costs disproportionate?

Choose the most cost-beneficial measures
Go for a derogation

Choose the most cost-effective measures

Are the costs disproportionate?

Choose the most cost-effective measures
VARIOUS COMPLEMENTARY SYSTEMS FOR COST RECOVERY

**ADMINISTRATIVE TAXES:** paid to the general budget.
- General taxes or penal fines
- New ecological tax.

**WATER-RELATED CHARGES:**
- National water charges – transiting through “Special Accounts of the Treasury"
- Basin water charges – levied by the Water Agency

**THE PRICING OF COMMUNITY SERVICES:**
- Price of raw water – levied by big developers
- Price of drinking water – levied by the municipalities or water suppliers

**TRANSFERTS:** International aid or from other economical sectors.

with the mobilization of specific financial resources,
6) with the mobilization of specific financial resources,

**THE « POLLUTER - USER – PAYS » PRINCIPLE**

Abstraction taxes

Pollution taxes

French WA = 2.300 Bi €/year!

The Water Agency’s Budget
adopted by the Board of Directors
with approval of the Basin Committee

Studies & Research

Operation

Measurement networks

Aid = 6-year Program

Big developers

Local authorities

Farmers

Industrialists
**Territorial equalization:**
in the same geographic area or basin

**Sectoral equalization:**
between public services – drinking water – electricity – sanitation – solid wastes ...

**Equalization between users:**
rich, poor, big consumers / polluters, small consumers / polluters

**Equalization between functions:**
between upstream and downstream areas, between commercial services and administrative functions
Implementation of the European Water Framework Directive in the 27 countries of the enlarged European Union, as well as in the candidate countries for accession, is a major milestone for promoting the principles of good governance advocated by INBO.

THANK YOU FOR YOUR ATTENTION!

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The demographic, economic and ecological consequences of the climate change are likely to be very significant.

It is thus essential to adapt water resources management policies, by taking into account the new elements of this change.

It is especially necessary to quickly evaluate the hydrological consequences of this change, according to various scenarios, to increase the thinking about and prospective, by developing adapted research programs.
INBO initiatives are open to your participation: your inputs are welcome!

http://www.inbo-news.org

For developing and strengthening basin organizations over the world